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4989 A radio talk prepared by Mr. Bailey E. Brown, Bureau of Chemistry and Soils, and Mr. T. R. Beattie, Bureau of Plant Industry, delivered in the National Farm and Home Hour through a network of 45 associate NBC radio Stations, Thursday, December 10, 1931.

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Plants in the home, particularly during the time of the year when outdoor growth has ceased, lend a cheerful note to the indoor atmosphere. In addition to this they exercise health promoting functions in that they tend to some extent to purify the atmosphere we breathe and to increase its humidity. It is questionable if there are many homes in which plants of some description, such as ferns, palms, rubber plants, geraniums, begonias, vines of different kinds and other equally popular plants are not grown. While the range of plants that may be grown inside the house is extensive, it has been shown that there are approximately a dozen kinds that represent from 60 to 75 percent of those actually grown indoors.

Success with house plants during the time they are within the house after cold weather sets in depends largely upon five things, namely, temperature, water supply, light, soil, and plant food. These are dealt with in the order given.

Temperature

A great deal of trouble is experienced with potted plants living indoors on account of excessive heat or cold. Excessive temperature causes the plants to lose too much water through their leaves, a condition not conducive to their best development. In many homes during the day the temperature is kept higher than suits most plants, resulting usually in forcing them to develop a large amount of tender, unhealthy growth. At night the temperature frequently drops to a point distinctly unfavorable to the tender growth, causing a set-back and general weakening of the vitality of the plant to a point where it is much more susceptible to disease and insect ravages. An average temperature with a relatively narrow range will permit most plants to adapt themselves nicely to their indoor environment so far as temperature is concerned. It is extremes in temperature that so frequently prove disastrous to house plants.

Watering

Careful watering is also of great importance in the life of house plants, particularly during the time of the year when the house is heated and the indoor air is very likely to be drier than that outside. On account of this dryness of the air indoors it is a wise precaution to provide a means of increasing the humidity or moisture content of the air. Not only for the sake of the plants but primarily for the benefit of the human occupants, it is a good plan to have in the room some device like a pan of water on a radiator or an attachment fastening behind it filled with water. Spraying the foliage of the plants is also beneficial.

Plants in pots require more water than those in boxes and plants in small pots require watering oftener than those in large pots. By examining the

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surface of the soil one can tell if water is needed. This is evidenced when it is found that the surface soil is dry. In watering, apply enough to wet the soil clear through or until water passes out the opening at the bottom. A good plan to follow is to set the pot or box in a pan of water and let it remain until the water reaches the top and the surface is evenly moistened. Then simply remove the pot and allow the excess of water to drain off. This watering will suffice until the surface of the soil dries out again.

Light

All plants require more or less light, the duration and intensity dependent upon the kind of plant. Ferns, palms and a number of the vines do not need as much sunlight as geraniums, roses and other flowering plants. The latter should be given the sunny locations. Plants requiring less sunlight, including ferns and palms, fail to do as well if exposed to too much sunlight.

Practically all plants are averse to western exposure and this should be avoided whenever possible. The afternoon sun seems too intense for all manner of house plants and if a west window is utilized it has been found that some sort of shading to reduce the amount of sunlight and heat is necessary.

Soil

The home of the plant is the soil. That is where its roots develop and it is largely upon satisfactory root development that the healthy growth of stems and foliage depends. Without good fertile soil it is practically impossible to grow good house plants. The soil in which plants are to be grown should possess a good mechanical condition, should be fertile and also contain plenty of available plant food.

For the general run of house plants a satisfactory soil is one containing one-third leaf mold or well-rotted compost, one-third good garden loam soil or well composted pasture or lawn sod and one-third clean gritty sand. If leaf mold or compost is not available, thoroughly rotted barnyard manure may be used instead. The addition of sand is for the purpose of insuring a good mechanical condition and to prevent undue packing. It also facilitates drainage, which is very necessary, for most plants will fail to thrive if the soil is too heavy and becomes water-logged. A water-logged soil means poor drainage, a condition which prevents a sufficient access of air to the soil. This leads to sourness and other conditions harmful to the plant.

Before mixing the leaf mold, garden loam or composted pasture or lawn sod and sand, any lumps of soil should be broken up and stones and rubbish removed. The soil and leaf mold should be finely divided and if necessary sifted through a not too fine sieve. The addition of bone meal at the rate of a tablespoonful or two to a bushel of the prepared soil will be desirable. The potting soil thus obtained will do for potting up young plants or for repotting plants which have become pot-bound and which require transferring to a size larger pot.

Plant Food

After the plant is well established some consideration should be given to feeding it and this will apply to plants not requiring repotting. Fertilizers

of any kind should be used with care and only in small quantities at a time. This is particularly true when using soluble plant food materials. Only healthy growing plants call for fertilizer treatment. More harm is done to house plants by over feeding and by attempting to feed plants in an unhealthy condition or plants seeking a resting period during which time feeding will prove harmful. Such plants should be allowed to go through the dormant stage in a dry cool cellar until signs of growth are in evidence when watering, repotting and exposure to light are indicated. It is then time to consider feeding the plant and not until then.

One of the best and safest fertilizer treatments for potted plants is liquid manure. One pound of barnyard manure soaked in 2 to 3 gallons of water for 24 hours will provide a manure water suitable for potted plants. To this extract may be added sodium nitrate or ammonium sulphate; sulphate or muriate of potash and sodium phosphate at the rate of 1/4 ounce each to 4 gallons of weak manure extract. If barnyard manure is not available dried cattle or sheep manure which is sold by fertilizer or seed dealers can be recommended, but use only one-half as much as of the barnyard manure.

On account of the difficulty of obtaining a supply of good quality manure the use of fertilizer salts dissolved in water can be recommended. For stimulating growth sodium nitrate or ammonium sulphate are effective. A teaspoonful of either dissolved in a gallon of water makes a proper strength. Care must be exercised that none of the solution touches the leaves or stems of the plants. The solution is best applied after the plants have been well watered and should not be applied more than once in two or three weeks.

A complete plant food solution may be used instead of the sodium nitrate or ammonium sulphate solution. This may be made by dissolving 1/4 ounce of sodium nitrate or other soluble nitrogen salt, 1/4 ounce of muriate or sulphate of potash and 1/4 ounce of ammonium or sodium phosphate in 1 gallon of water. This solution is too strong to be used direct and has to be diluted with water before applying to house plants. To provide a solution that can be applied to the soil, dilute 1/4 pint of the strong or stock solution to 2 quarts. This dilute solution will be enough for several potted plants or a small porch box. In applying the solution of salts do not pour it too close to the plant or on the foliage. Watering beforehand is desirable. This solution may be applied at intervals of 2 to 3 weeks during the spring and summer. When the plants are in the house during the colder parts of the year only three or four applications are recommended.

A simple method of feeding house plants is to add an ounce of a truck garden fertilizer, sold by fertilizer dealers or seedsmen to three or four gallons of water and stir well. Not all of the material will dissolve so let it settle out and then pour off the clear solution and use it for watering the plants.

There are precautions to be taken in using such solutions because if used excessively they will injure the plant. In the first place if the soil in the pot or can becomes dry it should be watered well before applying the chemical solution, and in the second, the application should not be made too often, as already pointed out.

General Advise about House Plants

It is well to avoid contamination of the air in which plants live with either furnace or illuminating gas. Use some method of ventilating but preferably prevent escape of gas.

Dust settling on the foliage of plants stops their breathing pores and renders them unhealthy. This can be remedied by spraying the foliage thoroughly at intervals during the winter.

Do not attempt to grow plants directly in jardinières or painted pots as this cuts off air circulation within the soil and in the former case adequate drainage is not provided which leads to water-logged soil and other unhealthy conditions. Avoid putting tender plants in locations where they can be disturbed or rubbed against. This applies particularly to ferns whose tender fronds are easily injured.

A little extra care about selecting the soil for the plants and about feeding them properly will do much toward bringing them through the indoor season in good healthy shape.